

STANDARD FORM NO. 64

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TO : The Files

DATE: 26 October 1960

FROM :

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SUBJECT: Contract RD-161, Task Order 3
Frequency-to-Time Domain Transformation Study

1. On 7 October 1960 the undersigned visited to monitor progress on the subject task order. Participating in the discussions were:

2. A compressive network consisting of 60 cascaded filter sections has been built, with components of the individual sections adjusted to $\pm 1\%$ of the theoretical optimum values. Maximum attenuation of this compressive network is about 30 db. Measurements of the phase response of this network have been made indicating that linearity is within 5% throughout the passband. believes that the actual linearity is closer to 2% with experimental error in phase measuring techniques accounting for the additional deviations.

3. This compressive network is designed to operate in the frequency range of approximately $8\frac{1}{2}$ to $11\frac{1}{2}$ mcs, and delay times range from nearly 225 microseconds at $8\frac{1}{2}$ mcs to approximately 3 microseconds at $11\frac{1}{2}$ mcs. At the time of this visit, no attempt had yet been made by the contractor to sweep a local oscillator across a signal with the output being fed into the compressive network. It is expected, however, that the present design should yield compressive factors $\left(\frac{\text{pulse width in}}{\text{pulse width out}}\right)$ of 50 or better.

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